Starmet CMI, Inc., Barnwell, Barnwell County, SC

POLREP #4, 11/20/02
A. Current Situation
Roof construction over the waste water ponds has been completed.

Bench scale tests for waste water treatment using chemical precipitation, filtration and ion exchange resins have been completed. Test results indicate that a concentration of 300 pico Curies per liter (industrial pre-treatment standard) cannot be obtained due to the high concentration of other metal ions in the waste water. Focus has switched from chemical treatment and precipitation to using evaporative units. The units are on order and will arrive on site the week of Oct. 21.

All three waste water evaporative units are on line and processing waste water. The units are operating on a 23.5 hour cycle allowing processing of 6 gallons/minute of pond water. The units will provide a reduction in waste water volume of 89%. The condensate will be solidified with a polyacrylamide prior to shipment off site to Envirocare in Utah. The first roll off is scheduled for pick-up on Dec. 4. Anticipated time for completion of waste water treatment, solidification and off site shipment is 3 months. Removal of the pond liner and contaminated soil removal will begin as soon as the ponds are drained. The ponds will be back filled with clean soil and vegetatively stabilized upon completion of this phase of the response.

B. Next Steps
The uranium derby shaving will be oxidized with nitric acid. The solution will then be neutralized with calcium hydroxide and heated for solidification prior to off site disposal. This is a change from the proposed blending with sand for off site shipment which would have involved vitrification at the disposal facility. On site neutralization will allow for safer transportation to the disposal facility.

PRP notification letters have been issued and initial responses have been received by EPA legal counsel.

POLREP #3, 10/05/02
A. Current Situation
Roof construction over the waste water ponds has been completed.

Bench scale tests for waste water treatment using chemical precipitation, filtration and ion exchange resins have been completed. Test results indicate that a concentration of 300 pico Curies per liter cannot be obtained due to the high concentration of other metal ions in the waste water. Focus has switched from chemical treatment and precipitation to using evaporative units. The units are on order and will arrive on site the week of Oct. 21. The sludge from the evaporative units systems will be solidified using a gel polymer and shipped to Envirocare in Utah for disposal.

All plating vats in the warehouses have been drained, the acids have been placed in drums and will be neutralized and solidified on site. Analytical data indicates high concentrations of uranium and other metals in the acids. The drums will be shipped to Waste Solutions in Texas for disposal.

The fire suppression system has been repaired and placed into service. All pyrophoric (uranium derby shavings) in the building have been stabilized. EPA has opened and account with the local electric membership coop to maintain electricity in the facility. All ventilation systems are functioning. Site security has been subcontracted under the ERRS contractor .

B. Next Steps
Due to the unfavorable results of the bench scale test and switching to a treatment alternative for the waste water ponds, the first shipment of waste off site is not scheduled until Nov. 1. Removal of the pond liner and contaminated soil removal will begin as soon as the ponds are drained. Estimated time frame: 3 months. The ponds will be back filled with clean soil and vegetatively stabilized upon completion of this phase of the response.

The uranium derby shaving will be blended with sand for off site shipment and disposal.

All drums of magnesium and calcium fluoride are being staged for decontamination and off site disposal.

Drum inventory and PRP search/notification has been completed. PRP notification letters are being issued next week. All drums of uranium tetrafluoride and bleed off tanks of uranium hexafluoride will remain at the facility pending negotiations with PRPs.

POLREP #2, 08/25/02
A. Incident Category
The Emergency Response and Removal Branch (ERRB) initiated an emergency removal action at Starmet ("Site") on June 24, 2002, to prevent the release of U238 from the waste water retention ponds behind the facility. U238 is listed in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as a hazardous substance. Analytical data indicated a concentration of U238 in excess of 1.6x105 pico Curies/liter in the waste water ponds. The two ponds, measuring 240 ft by 50 ft, contain approximately 500,000 gallons waste water. The roof covering the ponds was destroyed in a fire in February 2001, allowing the volume of waste water in the ponds to increase due to rain water infiltration. The pond liners are in poor condition and are leaking. At the time of the initial response, the ponds were in danger of overflowing due to heavy rains.

Starmet processes uranium hexafluoride (UF6) which is a bi-product of the gaseous diffusion process used to segregate U235 from U238. Fuel rods for nuclear power facilities use

enriched uranium pellets made from U 235. The UF6 was shipped in cylinders to Starmet to be processed into uranium tetrafluoride (UF4), which is a fairly stable solid compound (as so known as "green salt").

Starmet used the UF4 in the manufacture of uranium metal "derbies" which were shipped to Nuclear Metals, Concord, Massachusetts to be processed into armor piercing ammunition for the Department of Defense. Nuclear Metals is no longer operating and became a listed Superfund site (Site # 0100550) as of June 14, 2001.

Starmet currently has approximately 12,600 drums of UF4 stored on site and has filed for Chapter 11 Bankruptcy and reorganization. The facility also has an estimated 8,700 drums of calcium and magnesium fluoride contaminated low level radioactive waste material as well as plating waste, stored on site. The plating wastes are mainly solvents and solutions containing cadmium and nickel used to coat uranium metal when it is used for counter weights. Starmet holds a RARA permit (ID # SCD987570405) as a small quantity generator of plating wastes.

B. Site Description
1. Site location
The site is located at 365 Metal Drive, Barnwell, South Carolina. The property surrounding the site is planted in pine trees. The nearest residential property is 2 miles from the site. The town of Barnwell is approximately 8 miles from the site on well paved roads. The facility consists of two large steel framed buildings and the ponds. Both of the buildings as well as the ponds are surrounded by 8 ft high chain linked fences in good repair.

2. Description of threat
The immediate problem at the site is the volume of waste water in the ponds. Rain water continues to add to the volume of waste water and there is evidence that the ponds have overflowed in the past.

The drums inside the building are beginning to deteriorate. Many have been crushed by the weight of the drums stacked on top of them. Several of the drums are leaking.

Starmet had the power to the facility shut off on July 26, 2002 allowing UF4 dust and plating vat fumes to accumulate in the buildings. The facility is abandoned.

C . Preliminary Assessment/Site Inspection Results
There is evidence that the ponds have been breached in the past. Soil surrounding the ponds, outside the chain linked fence, indicate uranium concentrations in excess of background. There is currently no access restriction to the areas impacted by the overflow from the ponds. Rain will move the contamination into surface water impoundments or streams. Due to the lack of a roof over the ponds, rain water continues to increase the volume of water in the ponds, causing the ponds to overflow.

There are over 12,600 drums of radioactive material as well as hazardous waste stored at this facility. There is no one at the facility to maintain the ventilation system or fire suppression system.

RESPONSE INFORMATION

A. Current Situation

Two 6,000 gallon tanks, pumps and lines are staged near the waste water treatment ponds to provide for additional storage capacity in the event of heavy rains. Construction of a corrugated panel roof over the ponds is expected to be completed by the end of the week. Bench scale tests for waste water treatment using chemical precipitation, filtration and ion exchange resins are being conducted. Initial results have been sent to the EPA Radiation Laboratory in Montgomery for analysis. EPA ART is providing technical assistance. The on-site waste water treatment system has been designed and parts are on order.

A disposal location for the waste water has been identified pending analytical results indicating a U238 concentration of less than 300 pico Curies per liter in the treated waste water.

The fire suppression system has been repaired and placed into service. All pyrophoric (uranium derby shavings) in the building have been stabilized. EPA has opened and account with the local electric membership coop to maintain electricity in the facility. All ventilation systems are functioning. Site security has been subcontracted under the ERRS contractor (WAS).

All personnel on site have attended a site specific 8-hour Radiation Worker Safety Training program. Radiation Work Plans have been developed for all tasks involving roof construction, building maintenance and construction of the waste water treatment system (29CFR1910.1096).

EPA has obtained a verbal access agreement from the PRP.

B. Next Steps

Construction of the waste water treatment system is scheduled for September 3-13. The first shipment of treated waste water should leave the site the week of September 16th. Sediment disposal, removal of the pond liner and contaminated soil removal will begin as soon as the ponds are drained. The ponds will be back filled with clean soil and vegetatively stabilized upon completion of this phase of the response.

Drum inventory and PRP search/notification will be initiated pending final completion of the design plan for the waste water treatment system.